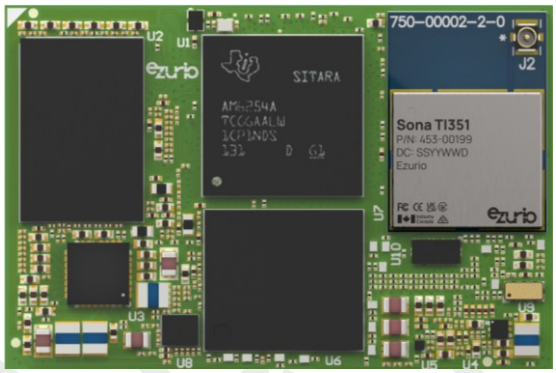
A secure and rugged TI AM62 based OSM-MF SOM: Dual Display, 3D Graphics, Industrial Peripherals, Camera, with TI CC3351 Wi-Fi 6 and Bluetooth LE 5.4

Our new CarbonAM62 OSM-MF family is powered by Texas Instrument's AM62x processor family, TI's TPS65219 PMIC, our Sona TI351 (TI CC3351) Wi-Fi and BLE wireless modules, LPDDR4 RAM, and eMMC storage. The CarbonAM62 is designed to meet the processing and connectivity needs of the commercial, industrial, and medical products. Our in-house USA based assembly allows you to choose the RAM, eMMC storage, and Sona Wi-Fi and Bluetooth connectivity that is most optimized for your product. All CarbonAM62 modules come with our industry leading software and integration support.

- **Powerful Heterogenous Multiprocessing:** Four 1.4 GHz Cortex-A53 cores, an 400 MHz Cortex-M4F applications MCU core, an 400 MHz Cortex-R5F device management core, and a dual-core Programmable Real-Time Unit. Run Linux and multiple RTOSes simultaneously on dedicated cores.
- **Dual Display with GPU:** Support dual independent displays with resolutions up to 3840 x 1080, GPU with performance up to 8 GFLOPS
- **Camera Support:** MIPI-CSI with virtual channel support
- **Sona TI351 Wi-Fi 6 and Bluetooth Low Energy 5.4:** Optional wireless based on TI CC3351
- **High Speed Interfaces:** USB 2.0 (480 Mbps) and dual Gigabit Ethernet (1 Gbps)
- **Industrial Interfaces:** UART, SPI, I2C, I2S, CAN-FD, GPIO, and more
- **Software and Board Support Options:** Yocto Linux/Buildroot Linux/Android/Debian/QNX for Cortex-A53s, FreeRTOS for the Cortex-M4F and Cortex-R5F
- **Secure and Encrypted Boot, Secure Enclave, and Secure File Storage:** Robust, secure, and encrypted boot mechanisms to ensure only trusted software boots on your device. Store and use secure keys, certificates, and credentials in run-time isolated trusted environment.
- **OSM-MF v1.2 Standard Form Factor: 45mm x 30mm** OSM-MF solder down form factor ensures one carrier design can support multiple processor, memory, and wireless configurations.
- **Hardware Upgrade Roadmap:** Build a product design that can easily be upgraded to the latest processors and wireless options as future Ezurio SOMs based on the OSM standard are released.
- **Advanced Common Carrier/Development Board:** Display, camera, audio, Ethernet, USB, PCI-Express, CAN, I2C, SPI, UART, power measurement, and more. Use in development and as reference designs for your carrier board design.
- **Assembled in the USA**



Choose the Options That Fit Your Project Needs

Temperature Range: Choose our industrial temperature models for harsh environments or our commercial temperature models for cost optimization

Memory: Choose the LPDDR4 DRAM and eMMC storage sizes that best fits your design's cost and performance.

Wi-Fi and Bluetooth: Select from our line of Sona wireless modules featuring dual band Wi-Fi 6, tri-band Wi-Fi 6E, up to Bluetooth 5.4, and multiple antenna configurations.

Carrier Board Customization: Use our reference carrier board to accelerate your design or we can create a fully custom board solution for your project

Long Term Software Support: Choose from Yocto Linux, Buildroot Linux, Android, Debian, or QNX for the Cortex-A53s and FreeRTOS for Cortex-M4F and Cortex-R5F. Optional Summit Suite Vulnerability Monitoring and Remediation ensures your Yocto and Buildroot SBOMs stay up to date with the latest security fixes.

Device Security: Our optional Summit Suite Chain of Trust service includes secure and encrypted boot architecture, secure programming of the hardware root of trust and device image, secure generation and provisioning of customers specific keys and certificates, and a secure signing service for generating new firmware and certificates.

Key Features

Graphics, Displays, and Cameras
Up to 2 independent displays, GPU, camera support

OSM-MF v1.2 Compatible
Built in the size optimized 45x30mm OSM Size-MF form factor and pin-compatible with our full range of OSM-MF modules

Robust Software and Board Support Support
Choose from Yocto Linux, Buildroot Linux, Android, Debian, or QNX for Cortex-A53, FreeRTOS for Cortex-M4F and Cortex-R5F

Secure Enclave and Secure Boot
Dedicated on-board security hardware, secure boot Linux, high-performance and flexible secure storage for passwords, certificates, and data storage.

Choose your Sona Wi-Fi and Bluetooth Module
Select from our line of Wi-Fi 6 and Wi-Fi 6E modules that include up to Bluetooth 5.4 and global radio certifications

Personal Support from Design to Manufacture
Our industry-renowned support and field application engineering team is passionate about helping you speed your design to market.

Application Areas

- Smart Building Control, HVAC
- Energy Meters, Energy Storage Smart Electrical Panels
- Test and Measurement Equipment
- Industrial Vision and Camera Systems
- Commercial Food and Beverage Equipment
- Medical Devices

Specifications

Category	Feature	Specification
Processors	Applications Processor	4x Cortex-A53 cores @ up to 1.4 GHz
	Applications Microcontroller	1x Cortex-M4F core @ up to 400 MHz
	Device Management MCU	1x Cortex-R5F core @ up to 400 MHz
	GPU	Imagination GPU
	Real-Time	Dual-core Programmable Real-Time Unit Subsystem (PRUSS) @ up to 333 MHz
Memory	RAM	1GB, 2GB, and 4GB LPDDR4
	Storage	Up to 128 GB eMMC (16GB eMMC default)
Graphics and Video	Display Interfaces	1x LVDS (up to 2 channels)*, up to 1920 x 1080 @ 60 fps per Single Link, up to 3840 x 1080 at 60 fps in Dual Link 1x 18-bit RGB, up to 1920 x 1080 @ 60 fps
	Graphics Processing Unit	Up to 8 GFLOPS, OpenGL ES3.1 and Vulkan 1.2 API support
Vision	Camera	1x 4-lane MIPI-CSI-2, up to 16 virtual channels per CSI-2 interface
Audio	Audio Interfaces	1x I2S
Peripherals	Interfaces	2x USB 2.0 (480 Mbps)
		2x Gbit Ethernet with IEEE® 1588 and TSN
		2x CAN-FD
		3x 4-wire UART** 2x 2-wire UART
		5x I2C**
		3x SPI (1x is also QSPI)
		1x SDIO 3.0/eMMC 5.1
		4x PWM
		24x GPIO
Wireless	Sona Wi-Fi and Bluetooth Modules	Sona TI351
		Sona IF573
		Sona IF513
		Sona NX611
		60 Series 60-SIPT
Power	Supply Voltage	5V
Physical	Dimensions	OSM-MF v1.2 Standard – 45mm x 30mm
Environmental	Temperature Range	0°C to +70°C (Commercial) and -40° to +85 °C (Industrial)
	Lead Free	Lead-free and RoHS-compliant

*Not to OSM-MF v1.2 spec, but pin-compatible with other Ezurio OSM-MF modules

**The additional Interfaces beyond OSM-MF v1.2 spec are available on OSM's GPIO pins

Ordering Information

Part	Description
TBD	TBD